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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Graham Stewart Brandon Street

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1301

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03/21/2003

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EXAMINER

CHANG, AUDREY Y

ART UNIT

PAPER NUMBER

2872

DATE MAILED: 03/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/869,859

Applicant(s)

STREET, GRAHAM STEWART
BRANDON

Examiner

Audrey Y. Chang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 January 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-5, 7-13, 15 and 17-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-5, 7-13, 15 and 17-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 1/17/03 is: a) ☐ approved b) ☒ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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DETAILED ACTION

Remark

- This Office Action is in response to applicant's amendment filed on January 17, 2003, which has been entered as paper number 11.
- By this amendment, the applicant has amended claims 2-5, 7-13, and 15, has canceled claims 1, 6, 14 and 16 and has newly added claims 17-20.
- Claims 2-5, 7-13, 15 and 17-20 remain pending in this application.
- The objections to *drawings* set forth in the previous Office Action dated July 17, 2002 **still hold**.
- The rejection to claims 1-16 under 35 USC 112, first paragraph, set forth in the previous Office Action dated July 17, 2002 *is withdrawn* in response to applicant's amendment.

Drawings

1. The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on January 17, 2003 have been disapproved because they **introduce new matter** into the **drawings**. 37 CFR 1.121(f) states that no amendment may introduce new matter into the disclosure of an application. The original disclosure *does not support* the showing of the two patterns (20 and 21) as in the newly proposed Figure 3. The specification does not give support for the *relative positions* and *orientation* between the two patterns as shown in the newly submitted Figure 3. The specification also does not give positive support for the system as shown in the newly submitted Figure 3.

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the features recited in the newly added claims 18 and 20 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

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Specification

3. The amendment filed on January 17, 2003 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material, which is not supported by the original disclosure, is as follows: The added materials concerning newly added Figure 3 in the specification are not supported by the original specification. For this reason the substitute specification submitted on January 17, 2003 is *declined* for entry.

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 17-20 and 2-5, 7-13, and 15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claim(s) are narrative in form and replete with indefinite and functional or operational language. The structure which goes to make up the device must be clearly and positively specified. The structure must be organized and correlated in such a manner as to present a complete operative device.

The phrase "substantially collimating" recited in newly added claims 17-20 is indefinite since it is not clear to what **degree** is the light considered to be "substantially" collimated.

The phrase "object axis" recited in newly added claims 17-20 and various dependent claims is indefinite and confusing since it is not clear what is considered to be "object axis". The object in this case

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is a pattern of light transmitting and light blocking regions; it is not clear what is considered to be the "axis" of these regions. Clarifications are required.

The phrase "thereby defining the position along a first object axis of said first substrate relative to said second substrate" recited in claim 17, the phrase "thereby defining the position along a second object axis of said first substrate relative to said second substrate" recited in claim 18, The phrase "thereby the position along a first object axis of said first substrate relative to said second substrate" recited in claim 19, and the phrase "thereby the position along a second object axis of said first substrate relative to said second substrate and the relative position in two orthogonal directions of the first substrate relative to the second substrate" recited in claim 20 are all confusing and indefinite. It is not clear "the position" of what is referred here. Also it is not clear what is considered to be the "object axis" of the first substrate. The first substrate is a collection of light transmitting and light blocking regions. How does an object axis is defined for the first substrate is entirely unknown. These phrases are also narrative and confusing, which render the scope of the claims extremely unclear.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. **Claims 2-5, 7-13, 15 and newly added claims 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to PCT application to Street (WO 97/22033) in view of the patent issued to Young (PN, 5,689,340).**

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The claims are drafted with numerous confusions and indefiniteness for the reasons stated above, which make the understanding of the claims very difficult. They can only be examined with the best and broadest interpretation of the examiner.

Street teaches an *autostereoscopic image display* that is comprised of a *mask* (21) having checkerboard arrangement of *light transmitting and light blocking regions*, (please see Figure 3). The checkerboard arrangement can be arbitrarily divided to include *two* sets of *plurality* of light transmitting and blocking regions formed on a single substrate, serves as the first substrate. The display further comprises a *first lenticular lens* (27) having at least one cylindrical lens element, that serves as the *first convergent means*, and a *second lenticular lens* (29), serves as the *second convergent means*, together for either collimating or reimaging the light beams originated from the transmitting regions of the mask to the locations of a display device (30), (please see Figure 3). The two lenticular lenses have orthogonally oriented cylindrical lens elements. The pattern of the light transmitting and blocking regions on the mask serves as the object pattern that is reimaged at the location of the display device, which serves as the image plane. The two sets of plurality of light transmitting and light blocking regions comprise a plurality of juxtaposed stripes, (please see Figure 3). It is *implicitly true* that the *relative positions* between the mask and the lenticular lenses are well defined by the lens maker's equation in the optics which essentially involves the *geometric* relationships between the object size and location, the image size, the relative distances between the mask, which acts as the object pattern, and the lenticular lenses and the relative distance between the image locations and the lenticular lens and the focal lengths of the lenses. Furthermore, *Young* in the same filed of endeavor teaches a *vision measurement system* (10, Figure 1) and method for measuring a lenticular material (14, Figure 1) wherein backlight sources are used to generate light through the lenticular material to form bright image pattern of the lenticular material on a plurality of sensors (20), including a 2-dimensiona array of CCD sensors, at the image plane for detecting the image pattern formed. The obtained image pattern on the CCD sensors is then feed into

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a vision measurement computer to calculate the desired location and alignment information of the lenticular material, (please see Figure 1). It would then have been obvious to one skilled in the art to apply the teachings of vision measurement system of Young to inspect and measure the positions and alignment of the autostereoscopic image display arrangement of Street for the benefit of achieving a more accurate alignment and the relative locations for the various optical elements in the display system which will definite improve the image display quality.

The newly submitted claims 17-20 disclose that the object pattern, which comprises the light transmitting and light blocking regions, is non-repeating. The cited references do not disclose such feature explicitly. However the specification also fails to teach the criticality of having a non-repeated object pattern will overcome any problem concerning using a repeated object pattern. It is implicitly true that the object pattern does not affect the way the image of such pattern is formed at the image plane, since it is the optics, namely the first and second light converging means (of the instant application), or the two lenticular lenses of the cited Street reference which determines the formation of the image of the object pattern at the image plane. To replace the object pattern on the mask of Street by a non-repeating object pattern is therefore considered to be obvious matters of design choice to one skilled in the art for the benefit of obtaining different pattern of the images.

The image pattern and the inclination of the image pattern are considered to by obvious matters of design choices to one skilled in the art since they does not effect the distance calculation between the lens elements and the mask. Although the Street reference does not teach specifically that the two lenticular lenses are formed on a single substrate however such design is very well known in the art and they are considered to be art recognized equivalents to one skilled in the art.

These references do not teach to include an aperture means explicitly. However Young does teach that the inspection and calculation could be limited to only "coded" areas of the lenticular material.

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It is therefore either implicitly true or an obvious modification to one skilled in the art to use an aperture means to limit the measurement only be done at desired location.

The position of the lenticular lenses certainly can be adjusted to the least manually by an operator's hands.

Response to Arguments

2. Applicant's arguments, filed January 17, 2003, have been fully considered and they are not persuasive. The newly submitted claims and newly amended claims have been fully considered and they are rejected for the reasons stated above.

3. Applicant's arguments are mainly drawn to newly submitted claims and newly amended features and they have been fully considered and addressed in the paragraphs above.

4. The applicant is respectfully advised to adequately describe what are the limitations of the claims that are sought for patent. The claims as stated now are narrative however the specifics of the invention, if there is any, are not positively stated.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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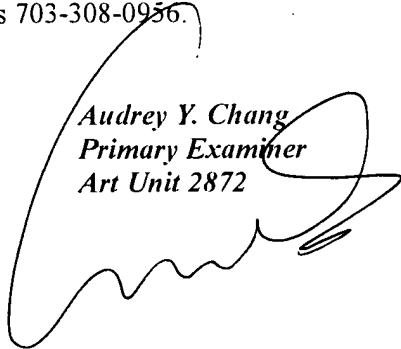
the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Audrey Y. Chang whose telephone number is 703-305-6208. The examiner can normally be reached on Monday-Friday (8:00-4:30), alternative Mondays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cassandra Spyrou can be reached on 703-308-1637. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Audrey Y. Chang
Primary Examiner
Art Unit 2872



A. Chang, Ph.D.
March 19, 2003